



# CNG/NGV Valves

## VCH86 Series Alternative Fuel Service Ball Valve

Catalog No. VCH86-6  
Jan. 2010



### Features

- Wetted components are compatible with compressed natural gas (CNG), liquid petroleum gas, gaseous and liquid hydrogen.
- Sturdy body and end connections made out of stainless 316 barstock.
- Maximum pressure rating: 413 bar (6000 psig).
- Temperature rating: - 40 to 121°C (-40 to 250°F).

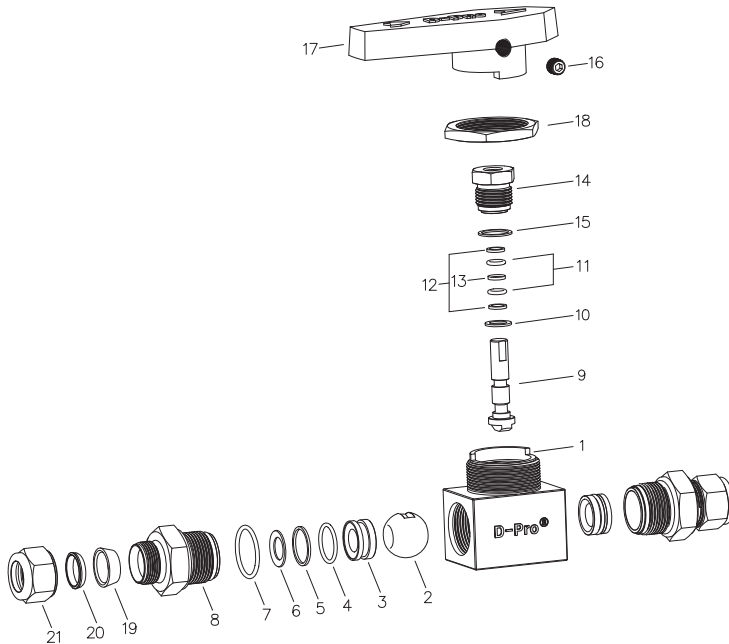
### Pressure-Temperature Ratings

| End Connections            | DK-LOK Tube Fitting         |                  |               | Female Pipe        |               |
|----------------------------|-----------------------------|------------------|---------------|--------------------|---------------|
|                            | 3/8 in.<br>1/2 in.<br>12 mm | 3/4 in.<br>16 mm | 1 in.         | 3/8 in.<br>1/2 in. | 3/4 in.       |
| Temperature °C (°F)        | Working Pressure bar (psig) |                  |               |                    |               |
| - 40 to 93<br>(-40 to 200) | 413<br>(6000)               | 400<br>(5800)    | 323<br>(4680) | 413<br>(6000)      | 381<br>(5520) |
| 121<br>(250)               | 413<br>(6000)               | 395<br>(5720)    | 320<br>(4640) | 413<br>(6000)      | 381<br>(5520) |

### CNG/NGV Certifications

| Certificates     | ECE R110                      | ANSI / AGA NGV 3.1-1995<br>CGV NGV 12.3-M95 | ANSI / IAS NGV 4.6-1999<br>CSA 12.56-M99 | ISO 15500                     |
|------------------|-------------------------------|---|--|-------------------------------|
| Certificate No.  | 110R-000181                   | 2010-REPORT-008 (00)                        | 2010-REPORT-009 (00)                     | 2010-CERT-007 (00)            |
| Classification   | Class 0                       | manual valve                                | manual valve (Class B)                   | manual valve                  |
| Temperature      | -40 to 120 °C (-40 to 250 °F) | -40 to 121 °C (-40 to 250 °F)               | -40 to 65 °C (-40 to 150 °F)             | -40 to 121 °C (-40 to 250 °F) |
| Working Pressure | 274 bar @ 120 °C              | 273 bar @ 121 °C                            | 293 bar @ 65 °C                          | 273 bar @ 121 °C              |

### Materials of Construction



| Component                                 | Glade / ASTM specification  |
|---|-----------------------------|
| 1 Body                                    | SS316/A276, A479            |
| 2 Ball                                    | SS316/A276, A479            |
| 3 Seat (2)                                | PEEK                        |
| 4 Seat O-ring (2)                         | HNBR                        |
| 5 Seat Backup Ring (2)                    | PTFE /D1710                 |
| 6 Disc Spring (2)                         | SS316/A240                  |
| 7 Connector O-ring (2)                    | HNBR                        |
| 8 End Connector (2)                       | SS316/A276, A479            |
| 9 Stem                                    | SS316/A276, A479            |
| 10 Stem Seat Bearing                      | PEEK                        |
| 11 Stem O-ring (2)                        | HNBR/D2000                  |
| 12 Stem Guide Ring                        | PTFE /D1710                 |
| 13 Stem Backup Ring (2)                   | PEEK                        |
| 14 Packing Bolt                           | SS316/A276, A479            |
| 15 Packing Bolt Gasket                    | SS316/A240<br>Silver-plated |
| 16 Set Screw                              | SS316 Stainless steel       |
| 17 Handle                                 | Nylon with brass insert     |
| 18 Panel Nut                              | SS316                       |
| 19, 20, 21 Dk-Lok Nut and Ferrule set (2) | SS316 Stainless steel       |

• Wetted components are listed in BLUE.

### Factory Testing

Every valve is factory tested with nitrogen @ 1000 psig (68 bar). Seats have a maximum allowable leak rate of 0.1 std cm<sup>3</sup>/min. The stem packing is tested with nitrogen @ 1000 psig (68 bar) for no detectable leakage.

### Cleaning and Packaging

Valves are cleaned and packaged in accordance with DK-LOK cleaning standard DC-01. Special cleaning and packaging in accordance with DK-LOK DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request.

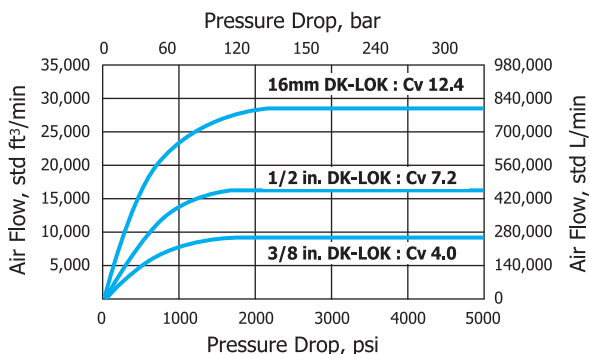
### Operation

- VCH86 ball valves are designed for fully open and close operation.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.

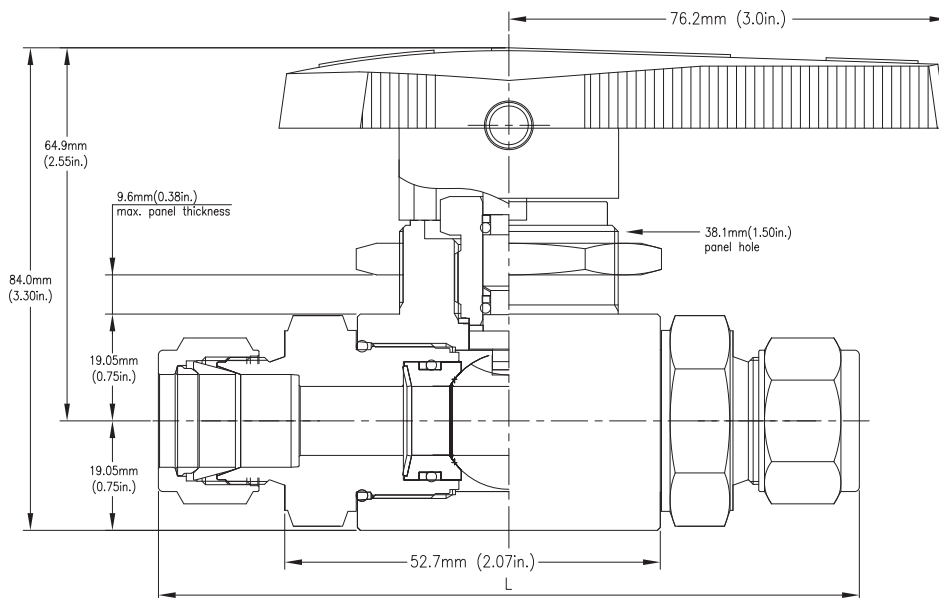
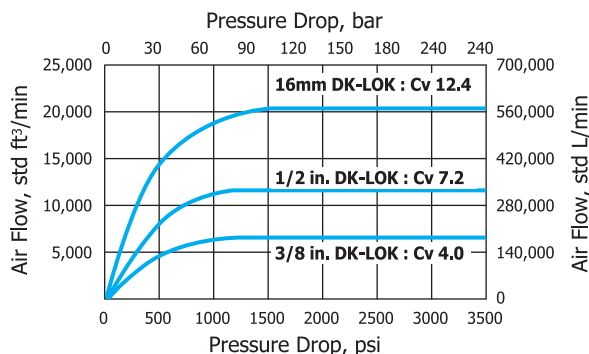
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## Flow Data @ 21°C (70°F)

### Air Pressure 350 bar (5000 psig)



### Air Pressure 250 bar (3600 psig)



## Ordering information and Table of Dimensions

| Ordering Number | End Connections | Orifice                |      | Cv    | Dimensions |                   |
|-----------------|-----------------|------------------------|------|-------|------------|-------------------|
|                 |                 | mm                     | in.  |       | L          |                   |
| VCH86-          | D-6T-S          | 3/8 in. DK-LOK         | 7.1  | 0.281 | 4.0        | 116 mm (4.57 in.) |
|                 | D-8T-S          | 1/2 in. DK-LOK         | 10.3 | 0.406 | 7.2        | 122 mm (4.8 in.)  |
|                 | D-12T-S         | 3/4 in. DK-LOK         | 12.0 | 0.472 | 7.1        | 130 mm (5.10 in.) |
|                 | D-16T-S         | 1 in. DK-LOK (1)       | 12.0 | 0.472 | 6.5        | 116 mm (4.57 in.) |
|                 | D-10M-S         | 10 mm DK-LOK           | 7.1  | 0.281 | 4.0        | 112 mm (4.40 in.) |
|                 | D-12M-S         | 12 mm DK-LOK           | 10.3 | 0.406 | 5.2        | 122 mm (4.80 in.) |
|                 | D-16M-S         | 16 mm DK-LOK           | 12.0 | 0.472 | 12.4       | 102 mm (4.00 in.) |
|                 | F-6N-S          | 3/8 in. Female pipe    | 12.0 | 0.472 | 11.0       |                   |
|                 | F-8N-S          | 1/2 in. Female NPT     | 12.0 | 0.472 | 13.8       |                   |
|                 | F-12N-S         | 3/4 in. Female NPT (1) | 12.0 | 0.472 | 7.8        |                   |

All dimensions shown are for reference only and are subject to change. Dimensions with DK-LOK nuts are in finger-tight position.

(1) Not recommended for panel mounting.

## Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK Tech accepts no liability for any improper selection, installation, operation or maintenance.